DEPT 5 REF

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Petr VISCOR et al.

Application No.: 09/700,463

Filed: December 21, 2000

For: PLANAR ELECTRON EMITTER

ATTN: Refund Section Accounting Div. Office of Finance

Docket No.: 107872

REQUEST FOR REFUND TO DEPOSIT ACCOUNT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Attached hereto is a copy of a Monthly Statement of Deposit Account (dated January, 2006) showing a charge of $100.00 related to the above-referenced application. This charge is marked with Fee Code 2201, which is the Patent Office Fee for extra independent claims. However, the copy of claims attached to the January 3, 2006 Response to Restriction Requirement was meant to list identical claims in the November 15, 2000 Preliminary Amendment. All independent claims were paid for on November 15, 2000. There are no extra independent claims filed in association with the January 3, 2006 Response to Restriction Requirement, and no fee should have been charged regarding the independent claims listed in the copy of claims attached to the January 3, 2006 Response to Restriction Requirement.

The January, 2006 Monthly Statement of Deposit Account also shows a charge of $775.00 related to the above-referenced application. This charge is marked with Fee Code 2202, which is the Patent Office Fee for extra claims. It appears that this charge was based on multiple dependent claims that appeared in the copy of claims attached to the January 3, 2006 Response to Restriction Requirement. However, the appearance of these multiple dependent claims were due to a typographical error in an unofficial copy of the claims. As discussed above, the copy of claims attached to the January 3, 2006 Response to Restriction Requirement purported to list claims identical to those of the November 15, 2000 Preliminary Amendment, which deleted multiple dependencies.

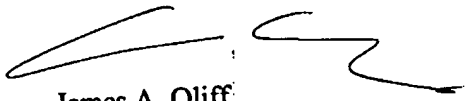
Applicants today filed a "Communication to Examiner" to correct this typographical error in the unofficial copy of the claims. In particular, the Communication to Examiner enclosed a corrected unofficial copy of the claims that deletes the multiple-

Preliminary Amendment. Thus, as corrected, there are no more multiple dependent claims. Also, as discussed above, all claims were paid for on November 15, 2000. There is no extra claims filed in association with the January 3, 2006 Response to Restriction Requirement. Thus, no fee should be charged.

It is noted that the unofficial copy of claims attached to the January 3, 2006 Response to Restriction Requirement was a courtesy copy for the Examiner's convenience in response the Examiner's request. The courtesy copy was intended as a clean copy of the claim amendments in the November 15, 2000 Preliminary Amendment, and the Patent Office was never instructed or authorized to treat these claims as a replacement of the pending claims.

Accordingly, it is respectfully requested that this charge be re-credited to Deposit Account No. 15-0461 and that the Patent Office acknowledge this credit in writing.

Respectfully submitted,



James A. Oliff
Registration No. 27,075

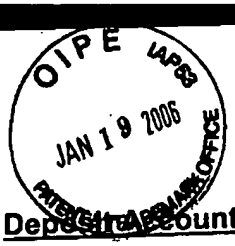
Gang Luo
Registration No. 50,559

JAO:GXL/sqb

Date: January 19, 2006

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

DEPOSIT ACCOUNT USE AUTHORIZATION
Please grant any extension necessary for entry;
Charge any fee due to our Deposit Account No. 15-0461



Deposit Account Statement

Requested Statement Month:	January 2006
Deposit Account Number:	150461
Name:	OLIFF & BERRIDGE P L C
Attention:	BARBARA WATTS
Address:	277 SOUTH WASHINGTON STREET
City:	ALEXANDRIA
State:	VA
Zip:	22314
Country:	UNITED STATES OF AMERICA

DATE	SEQ	POSTING REF TXT	ATTORNEY DOCKET NBR	FEE CODE	AMT
01/17	4	09700463	107872	2202	$775.00
01/17	5	09700463	107872	2201	$100.00

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Petr VISCOR et al.

Application No.: 09/700,463

Filed: December 21, 2000

For: PLANAR ELECTRON EMITTER

Group Art Unit: 2826

Examiner: F. ERDEM

Docket No.: 107872

COMMUNICATION TO EXAMINER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response the Examiner's request and for the Examiner's convenience, a copy of "current claims" was attached to the January 3, 2006 Response to Restriction Requirement. However, the January 3, 2006 copy of current claims contained typographical errors. Accordingly, a copy of corrected current claims is enclosed herewith for replacement.

In particular, the January 3, 2006 copy intended to incorporate the claim amendments included in the November 15, 2000 Preliminary Amendment, which deleted multiple-dependent claims. However, claims 3, 15, 22, 28, 36, 43, 49 and 55 inadvertently remained in multiple-dependence form in the January 3, 2006 copy. Accordingly, the enclosed corrected copy deletes the multiple-dependence of claims 3, 15, 22, 28, 36, 43, 49 and 55, as was done by the November 15, 2000 Preliminary Amendment.

It is noted that the copy of claims attached to the January 3, 2006 Response to Restriction Requirement was a courtesy copy for the Examiner's convenience in response the Examiner's request. The courtesy copy was intended as a clean copy of the claim

amendments in the November 15, 2000 Preliminary Amendment, and was not filed to replace the pending claims. Thus, it is proper to replace the courtesy copy to correct the typographical errors therein to truly reflect the claim amendments in the November 15, 2000 Preliminary Amendment.

Accordingly, the Examiner is respectfully requested to disregard the January 3, 2006 copy of claims.

Respectfully submitted,

James A. Oliff
Registration No. 27,075

Gang Luo
Registration No. 50,559

JAO:GXL/hs

Date: January 19, 2006

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

DEPOSIT ACCOUNT USE AUTHORIZATION
Please grant any extension necessary for entry;
Charge any fee due to our Deposit Account No. 15-0461

List of Claims:

1. An article comprising

- an element having a first and a second surface, wherein

- the first surface is adapted to hold a first electrical charge, and wherein the second surface is adapted to hold a second electrical charge, the first surface being substantially parallel to the second surface, and wherein

- the element comprises a material or a material system being prepared so as to reduce electron scattering within the material or material system, and having a predetermined crystal orientation perpendicular to the first or second surface,

- means for providing an electric field across at least part of the element, said means comprising

- means for providing the first electrical charge to the first surface of the element, and

- means for providing the second electrical charge to the second surface of the element, the second electrical charge being different from the first electrical charge in order to move electrons in a direction substantially perpendicular to the first or the second surface.

2. An article according to claim 1, wherein the material or material system comprises a semiconductor material, such as silicon, germanium, silicon carbide, gallium arsenide, indium phosphide, indium antimonide, indium arsenide, aluminium arsenide, zinc telluride or silicon nitride or any combination thereof.

3. An article according to claim 1, wherein the preparation of the material or material system comprises doping the material or material system with a dopant so as to obtain a predetermined doping level.

4. An article according to claim 3, wherein the dopant comprises phosphorus, lithium, antimony, arsenic, boron, aluminium, tantalum, gallium, indium, bismuth, silicon,

germanium, sulfur, tin, tellurium, selenium, carbon, beryllium, magnesium, zinc or cadmium or any combination thereof.

5. An article according to claim 3, wherein the predetermined doping level is less than $1x10^{18}$ cm^{-3}, such as less than $1x10^{16}$ cm^{-3}, such as less than $1x10^{14}$ cm^{-3}, such as less than $1x10^{13}$ cm^{-3}, such as less than $1x10^{12}$ cm^{-3}.

6. An article according to claim 1, wherein the means for providing the first electrical charge to the first surface comprises an at least partly conductive first material or material system.

7. An article according to claim 1, wherein the means for providing the second electrical charge to the second surface comprises an at least partly conductive second material or material system.

8. An article according to claim 6, wherein the at least partly conductive first material or material system constitutes a layer having a first and a second surface, wherein the second surface is operationally connected to a first terminal of a charge reservoir and wherein the first surface is in direct contact with the first surface of the material or material system of the element.

9. An article according to claim 7, wherein the at least partly conductive second material or material system constitutes a layer having a first and a second surface, wherein the first surface is operationally connected to a second terminal of the charge reservoir and wherein the second surface is in direct contact with the second surface of the material or material system of the element.

10. An article according to claim 6, wherein the at least partly conductive first and second material or material system comprises a metal or a highly doped semiconductor material with a doping level higher than $1x10^{17}$ cm^{-3}.

11. An article according to claim 10, wherein the at least partly conductive first and second material or material system comprises gold, chromium, platinum, aluminium, copper,

cesium, rubidium, strontium, indium, praseodymium, samarium, ytterbium, francium or europium or any combination thereof.

12. An article according to claim 1, wherein the electrons comprise quasi-ballistic electrons.

13. A method for providing a first type of electrons, said method comprising the steps of:

providing an element having a first and a second surface, wherein

the first surface is adapted to hold a first electrical charge, and wherein the second surface is adapted to hold a second electrical charge, the first surface being substantially parallel to the second surface, and wherein

the element comprises a material or a material system being prepared so as to reduce electron scattering within the material or material system, and having a predetermined crystal orientation perpendicular to the first or second surface,

providing means for providing the first electrical charge to the first surface of the element, and

providing means for providing the second electrical charge to the second surface of the element, the second electrical charge being different from the first electrical charge so as to move a second type of electrons in a direction substantially perpendicular to the first or second surface.

14. A method according to claim 13, wherein the material or material system comprises a semiconductor material, such as silicon, germanium, silicon carbide, gallium arsenide, indium phosphide, indium antimonide, indium arsenide, aluminium arsenide, zinc telluride or silicon nitride or any combination thereof.

15. A method according to claim 13, wherein the preparation of the material or material system comprises doping the material or material system with a dopant so as to obtain a predetermined doping level.

16. A method according to claim 15, wherein the dopant comprises phosphorus, lithium, antimony, arsenic, boron, aluminium, tantalum, gallium, indium, bismuth, silicon, germanium, sulfur, tin, tellurium, selenium, carbon, beryllium, magnesium, zinc or cadmium or any combination thereof.

17. A method according to claim 15, wherein the predetermined doping level is less than $1x10^{18}$ cm^{-3}, such as less than $1x10^{16}$ cm^{-3}, such as less than $1x10^{14}$ cm^{-3}, such as less than $1x10^{13}$ cm^{-3}, such as less than $1x10^{12}$ cm^{-3}.

18. A method according to claim 13, wherein the means for providing the first electrical charge to the first surface comprises an at least partly conductive first material or material system.

19. A method according to claim 13, wherein the means for providing the second electrical charge to the second surface comprises an at least partly conductive second material or material system.

20. A method according to claim 18, wherein the at least partly conductive first material or material system constitutes a layer having a first and a second surface, wherein the second surface is operationally connected to a first terminal of a charge reservoir and wherein the first surface is in direct contact with the first surface of the material or material system of the element.

21. A method according to claim 19, wherein the at least partly conductive second material or material system constitutes a layer having a first and a second surface, wherein the first surface is operationally connected to a second terminal of the charge reservoir and wherein the second surface is in direct contact with the second surface of the material or material system of the element.

22. A method according to claim 20, wherein a potential difference between the first and second terminals of the charge reservoir is larger than 2 volts.

23. A method according to claim 18, wherein the at least partly conductive first and second material or material system comprises a metal or a highly doped semiconductor material with a doping level higher than $1x10^{17}$ cm^{-3}.

24. A method according to claim 23, wherein the at least partly conductive first and second material or material system comprises gold, chromium, platinum, aluminium, copper, cesium, rubidium, strontium, indium, praseodymium, samarium, ytterbium, francium or europium or any combination thereof.

25. A method according to claim 13, wherein the second type of electrons comprises quasi-ballistic electrons.

26. A method for fabricating an article, said method comprising the steps of:

providing a semiconductor material or material system having a first and a second surface, the second surface being substantially parallel to the first surface, the semiconductor material or material system having a predetermined crystal orientation perpendicular to the first or second surface,

providing a surface treatment to the first and second surfaces so as to reduce surface roughness,

doping the semiconductor material or material system with a dopant so as to obtain a predetermined doping level so as to reduce electron scattering within the material or material system,

providing an at least partly conductive first material or material system, said first material or material system forming a layer having a first and a second surface, wherein the second surface is operationally connected to a first terminal of a charge reservoir and wherein the first surface is in direct contact with the first surface of the material or material system of the element, and

providing an at least partly conductive second material or material system, said second material or material system forming a layer having a first and a second surface, wherein the first surface is operationally connected to a second terminal of the charge reservoir and

wherein the second surface is in direct contact with the second surface of the material or material system of the element.

27. A method according to claim 26, wherein the semiconductor material comprises silicon, germanium, silicon carbide, gallium arsenide, indium phosphide, indium antimonide, indium arsenide, aluminium arsenide, zinc telluride or silicon nitride or any combination thereof.

28. A method according to claim 26, wherein the predetermined crystal orientation is the <111>, <110> or <100> direction.

29. A method according to claim 26, wherein the surface treatment comprising optical polishing.

30. A method according to claim 26, wherein the dopant comprises lithium, phosphorus, antimony, arsenic, boron, aluminium, tantalum, gallium or indium or any combination thereof.

31. A method according to claim 26, wherein the predetermined doping level is less than $1x10^{18}$ cm^{-3}, such as less than $1x10^{16}$ cm^{-3}, such as less than $1x10^{14}$ cm^{-3}, such as less than $1x10^{13}$ cm^{-3}, such as less than $1x10^{12}$ cm^{-3}.

32. A method according to claim 26, wherein the at least partly conductive first and second material or material system comprises a metal or a highly doped semiconductor material with a doping level larger than $1x10^{17}$ cm^{-3}.

33. A method according to claim 32, wherein the at least partly conductive first and second material or material system comprises gold, platinum, chromium, aluminium or copper or any combination thereof.

34. A flat panel display comprising

an article according to claim 1, the article further comprising

a layer of material being adapted to emit light at a plurality of wavelengths upon exposure of electrons, said material layer defining, in a plane substantially parallel to the first and second surface of the element, a two-dimensional matrix having one or more surface elements, each surface element being adapted to emit light at a predetermined wavelength, and

means for selectively proving electrons to the one or more surface elements in the two-dimensional matrix.

35. A flat panel display according to claim 34, wherein the material layer for emitting the plurality of wavelengths comprise an appropriate luminophors or standard colour television phosphors.

36. A flat panel display according to claim 34, wherein the emitted light comprises at least three wavelengths corresponding to at least three colours.

37. A flat panel display according to claim 36, wherein any colour may be deduced from a combination of the at least three colours emitted from the layer.

38. A flat panel display according to claim 34, wherein the emitted wavelengths corresponds to colours red, yellow and blue, or to colours red, green and blue.

39. A flat panel display according to claim 34, wherein the electrons comprise quasi-ballistic electrons.

40. A flat panel display according to claim 34, wherein the selective means comprises a pattern so as to define, in a plane substantially parallel to the first or second surface, a two-dimensional matrix of electrically controllable matrix elements, said pattern being formed of the at least partly conductive material or material system.

41. A method for exposing a film to a plurality of electrons of a first type, said method comprising the steps of:

providing a first element having a first and a second surface, wherein

the first surface is adapted to hold a first electrical charge, and wherein the second surface is adapted to hold a second electrical charge, and wherein

the element comprises a material or a material system being prepared so as to reduce electron scattering within the material or material system, and having a predetermined crystal orientation perpendicular to the first or second surface,

providing a second element, said second element being adapted to hold the film to be exposed to the plurality of electrons of the first type,

providing a patterned absorption layer, said absorption layer being adapted to absorb electrons transmitted through the first element at positions determined by the pattern,

providing the first electrical charge to the first surface of the first element, and

providing the second electrical charge to the second surface of the first element, the second electrical charge being of opposite sign compared to the first electrical charge so as to move a second type of electrons from the first surface towards the second surface, and

providing a third electrical charge to the second element, said third electrical charge having the same sign as the second electrical charge.

42. A method according to claim 41, wherein the material or material system comprises a semiconductor material, such as silicon, germanium, silicon carbide, gallium arsenide, indium phosphide, indium antimonide, indium arsenide, aluminium arsenide, zinc telluride or silicon nitride or any combination thereof.

43. A method according to claim 41, wherein the preparation of the material or material system comprises doping the material or material system with a dopant so as to obtain a predetermined doping level.

44. A method according to claim 43, wherein the dopant comprises phosphorus, lithium, antimony, arsenic, boron, aluminium, tantalum, gallium, indium, bismuth, silicon, germanium, sulfur, tin, tellurium, selenium, carbon, beryllium, magnesium, zinc or cadmium or any combination thereof.

45. A method according to claim 43, wherein the predetermined doping level is less than $1x10^{18}$ cm^{-3}, such as less than $1x10^{16}$ cm^{-3}, such as less than $1x10^{14}$ cm^{-3}, such as less than $1x10^{13}$ cm^{-3}, such as less than $1x10^{12}$ cm^{-3}.

46. A method according to claim 41, wherein the first electrical charge is provided to the first surface of the first element from a first terminal of a charge reservoir.

47. A method according to claim 41, wherein the second electrical charge is provided to the second surface of the first element from a second terminal of the charge reservoir.

48. A method according to claim 41, wherein the third electrical charge is provided to the second element from a third terminal of the charge reservoir.

49. A method according to claim 46, wherein a potential difference between the first and second terminals of the charge reservoir is larger than 2 volts.

50. A method according to claim 41, wherein the second element comprises a metal or a semiconductor material, such as silicon, germanium, silicon carbide, gallium arsenide, indium phosphide, indium antimonide, indium arsenide, aluminium arsenide, zinc telluride or silicon nitride or any combination thereof.

51. A method according to claim 41, wherein the film comprises a resist.

52. A method according to claim 41, wherein the second type of electrons comprises quasi-ballistic electrons.

53. An article comprising

an element having a first and a second surface area, wherein

the first surface area is adapted to hold a first electrical charge, and wherein the second surface area is adapted to hold a second electrical charge, and wherein

the element comprises a material or a material system being prepared so as to reduce electron scattering within the material or material system, and having a predetermined crystal orientation perpendicular to the first or second surface,

means for providing an electric field across at least part of the element, said means comprising

means for providing the first electrical charge to the first surface area of the element, and

means for providing the second electrical charge to the second surface area of the element, the second electrical charge being different from the first electrical charge in order to move electrons between the first surface area and the second surface area.

54. An article according to claim 53, wherein the material or material system comprises a semiconductor material, such as silicon, germanium, silicon carbide, gallium

arsenide, indium phosphide, indium antimonide, indium arsenide, aluminium arsenide, zinc telluride or silicon nitride or any combination thereof.

55. An article according to claim 53, wherein the preparation of the material or material system comprises doping the material or material system with a dopant so as to obtain a predetermined doping level.

56. An article according to claim 55, wherein the dopant comprises phosphorus, lithium, antimony, arsenic, boron, aluminium, tantalum, gallium, indium, bismuth, silicon, germanium, sulfur, tin, tellurium, selenium, carbon, beryllium, magnesium, zinc or cadmium or any combination thereof.

57. An article according to claim 55, wherein the predetermined doping level is less than $1x10^{18}$ cm^{-3}, such as less than $1x10^{16}$ cm^{-3}, such as less than $1x10^{14}$ cm^{-3}, such as less than $1x10^{13}$ cm^{-3}, such as less than $1x10^{12}$ cm^{-3}.

58. An article according to claim 53, wherein the means for providing the first electrical charge to the first surface comprises an at least partly conductive first material or material system.

59. An article according to claim 53, wherein the means for providing the second electrical charge to the second surface comprises an at least partly conductive second material or material system.

60. An article according to claim 58, wherein the at least partly conductive first material or material system constitutes a layer having a first and a second surface, wherein the second surface is operationally connected to a first terminal of a charge reservoir and wherein the first surface is in direct contact with the first surface of the material or material system of the element.

61. An article according to claim 59, wherein the at least partly conductive second material or material system constitutes a layer having a first and a second surface, wherein the first surface is operationally connected to a second terminal of the charge reservoir and wherein

the second surface is in direct contact with the second surface of the material or material system of the element.

62. An article according to claim 57, wherein the at least partly conductive first and second material or material system comprises a metal or a highly doped semiconductor with a doping level higher than $1x10^{17}$ cm^{-3}.

63. An article according to claim 61, wherein the at least partly conductive first and second material or material system comprises gold, chromium, platinum, aluminium, copper, cesium, rubidium, strontium, indium, praseodymium, samarium, ytterbium, francium or europium or any combination thereof.

64. An article according to claim 53, wherein the electrons comprise quasi-ballistic electrons.

United States Patent and Trademark Office
- Sales Receipt -

01/17/2006 TYOUNG 00000003 150461 09700463

01 FC:2202 775.00 DA
02 FC:2201 100.00 DA

Adjustment date: 09/08/2006 SDIRETA1
01/17/2006 TYOUNG 00000003 150461 09700463
01 FC:2202 775.00 CR
02 FC:2201 100.00 CR